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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/624,098 | 07/24/2000 | Mario Tenuta | 2527-1A | 5268 |

7590 02/18/2004
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CANADA

EXAMINER

NAFF, DAVID M

ART UNIT PAPER NUMBER

1651

DATE MAILED: 02/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/624,098 | TENUTA ET AL. | |
| | Examiner | Art Unit | |
| | David M. Naff | 1651 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

The amendment of 11/25/03 amended claim 1.

Claims examined on the merits are 1-15 and 20 which are all claims in the application.

5 The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

Claims 1-12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muncie et al (newly applied) in view of Cooley
10 (6,300,282 B1).

The claims are drawn to a method of controlling soilborne pathogens in soil by adding to the soil a nitrogen-containing material and a pH reducing agent to reduce the soil pH to below 5.5. The nitrogen containing material is in sufficient amount to produce
15 sufficient nitrous acid to control the soilborne pathogens.

Muncie et al disclose (page 303 under SUMMARY) that acid fertilizer alone will reduce potato scab infection. The least amount of scab occurred in soils of pH 3.5-3.8.

Cooley discloses adding an ammonium nitrogen source to soil when
20 growing potatoes (col 1, lines 33-45) to increase potato yield.

When using a low pH to control potato scab as disclosed by Muncie et al, it would have been obvious to add an ammonium nitrogen source as disclosed by Cooley to increase potato yield. Nitrous acid would inherently be produced as required in claim 1. The pH reducing agent
25 being in an ammonium source as in dependent claim 3 would have been

Art Unit: 1651

suggested by Muncie et al using an acid fertilizer. Adding animal manure, meat or bone meal or soya meal as in claims 6-8 would have been obvious since these materials would have been expected to contain nitrogen. Selecting an amount of nitrogen material to apply as in
5 claims 9 and 10 for optimum potato growth would have required only limited experimentation and been obvious. Adding the pH reducing agent before the nitrogen material or the converse as in claims 11 and 12 would have been a matter of obvious choice depending on individual preference and convenience. Measuring the pH of the soil as in claim
10 20 would have been obvious to determine how much the pH must be lowered to obtain the desired acid pH. The buffer capacity of claim 20 would be that of most soils for growing potatoes.

Claim Rejections - 35 USC § 103

Claims 13-15 are rejected under 35 U.S.C. 103(a) as being
15 unpatentable over the references as applied to claim 1-12 and 20 above, and further in view of Behel Jr. (5, 366, 533), and if necessary in further view of Weltzien et al (4,919,702).

The claims require the pH to be reduced by adding an acid such as citric acid.

20 Behel Jr. discloses adding to soil a citrus by-product that provides citric acid in soil to complex with iron and make the iron available for plants (col 2, lines 55-66 and col 6, line 56).

Weltzien et al disclose adding a fertilizer to soil that contains ascorbic acid (col 3, lines 19-29) and an ammonium nitrogen source
25 (col 5, lines 25 and 34-37).

Art Unit: 1651

When controlling potato scab disease by lowering the pH of soil as set forth above, it would have been obvious to add citric acid to the soil to provide the lower pH as suggested by Behel Jr providing citric acid in soil, and if needed as further suggested by Weltzien et al adding to soil a fertilizer containing ascorbic acid.

Response to Arguments

Applicants arguments are moot in view of the experiments of Muncie et al clearly showing that lower soil pH reduced potato scab. While Muncie et al disclose that greatest scab reduction occurred when sulphur is applied in combination with acid, Muncie et al found that pH alone can reduce scab. The present claims do not exclude adding sulphur.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Naff whose telephone number is 571-272-0920. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1651

Information regarding the status of an application may be
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PAIR system, contact the Electronic Business Center (EBC) at 866-217-
9197 (toll-free).



David M. Naff
Primary Examiner
Art Unit 1651

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2/14/04